



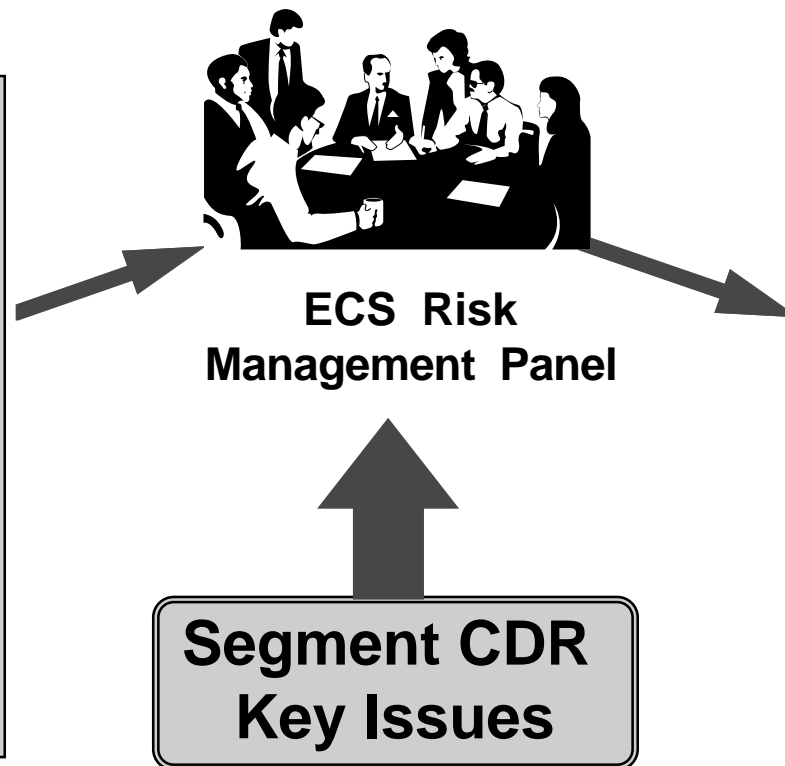
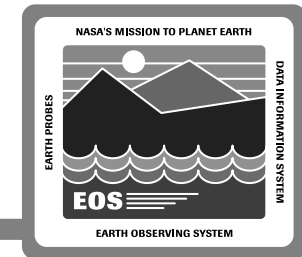
ECS Risk Management

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**ECS Release A SDPS/CSMS Critical Design Review
17 August 1995**

ECS Program Risk Management



PRIORITIZED RISK LIST

Programmatic

P-3 Compressed Development Schedule

Communications Technology

T-9 DCE Immaturity for Release A
T-1 CORBA Immaturity for Release B
T-10 Object Management Framework Availability

Storage Technology

T-5 Cost Effective Storage Technology
T-4 COTS Hierarchical Storage Management
T-8 Scalability & Maintainability of Archive
T-7 Data Base Management Systems

User Interaction

U-1 Number and Activity of Users
U-4 Processing & Storage for Standard Products

INTEGRATED MITIGATION PLAN

	94	95	96	97
MILESTONES	▲ PDR	▲ CDR	▲ RFR	
STRATEGIC DECISIONS	▲	▲		
PROTOTYPES	—	▲	▲	▲

Risk Status at PDR

PRIORITIZED RISK LIST

Push and Pull

J-4 Processing and Storage of Standard Products
S-7 Production Planning and Scheduling
J-1 Number and Activity of Users
T-7 Data Base Management Systems

Infrastructure

A-7 CSS Performance Overhead
T-11 CSMS Services by Platform

Archive Storage

T-5 Cost Effective Storage Technology
T-4 COTS Hierarchical Storage Management
T-8 Scalability & Maintainability of Archive

System Development

A-6 COTS Full Life Cycle Cost and Management
P-3 Compressed Development Schedule
P-7 Ops Concept and Multi-Segment Integration

INTEGRATED MITIGATION PLAN

	94	95	96	97
MILESTONES	▲ PDR	▲ CDR	▲ RFR	
STRATEGIC DECISIONS	▲	▲		
PROTOTYPES	—	▲	▲	▲

Risk Status at CDR

Prioritized Release A Risk List from PDR



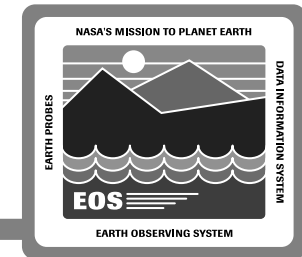
Infrastructure

- A-7 CSS Performance Overhead
- T-11 CSMS Services by Platform

Archive Storage

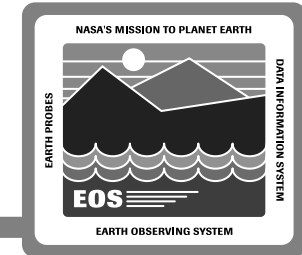
- T-5 Cost Effective Storage Technology
- T-4 COTS Hierarchical Storage Management
- T-8 Scalability & Maintainability of Archive

ECS Program Risks Status: Rel A Infrastructure



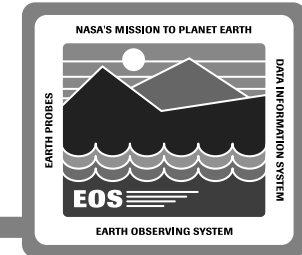
	Risk Item	Status	Release A Action/Design Impact
A-7	CSS Performance Overhead	<ul style="list-style-type: none"> IR1 delivery Dec. '95; Evaluations planned CSS Performance Testing (Sockets and RPCs) DFS, NFS Performance Results, DID 305-12 	<ul style="list-style-type: none"> Analysis showed one software layer should be dropped from design; fewer layers will improve performance FTP selected for bulk data transfer
T-11	CSMS Services by Platform	<ul style="list-style-type: none"> OODCE in IR1 on platforms where needed 	<ul style="list-style-type: none"> Agreements made with vendors for needed Release A ports

ECS Program Risks Status: Rel A Archive Storage



	Risk Item	Status	Release A Action/Design Impact
T-5	Cost Effective Storage Technology	<ul style="list-style-type: none"> • STK WolfCreek 9360 used to collect H/W characterization data • Characterization data to be used in system sizing • Prototype evaluation of E-Systems EMASS and Convex UniTree • Prototype used to investigate influence of FSMS on the data transfer rates • Data compression studied and documented; Prototyped also • Continue to assess tape technology 	<ul style="list-style-type: none"> • NTP selected for Release A; forecast helical scan or optical for Release B and beyond • Multi-media robotics selected to allow for technology insertion
T-4	COTS Hierarchical Storage Management	<ul style="list-style-type: none"> • Multi-FSMS prototype evaluated multiple FSMS and routing between • FSMS Prototype evaluated FSMS w/in UFS and FSMS separate from UFS; examined functional capabilities mapped to ECS Program Req't. • Core Data Server prototyped 	<ul style="list-style-type: none"> • COTS encapsulation strategy to support technology insertion • Encapsulated AMASS software for Release A • Architecture is not based on COTS supplying a virtual file system view of the archive

ECS Program Risks Status: Rel A Archive Storage (cont.)



	Risk Item	Status	Release A Action/Design Impact
T-8	Scalability & Maintainability of Archive	<ul style="list-style-type: none"> NAS prototype examined implementation issues and risk factors Data Server prototype included in EP6 Multi-resident AFS proof of concept prototype examined data retrievals in heterogeneous storage environment FSMS COTS prototype evaluated AMASS and EpochServ AMASS and EpochServ trade FSMS w/in UFS and separate from UFS, respectively 	<ul style="list-style-type: none"> Storage management design at Release A (host-based storage) anticipates likely Release B design (network-attached storage) and facilitates transition Multi-media robotics selected to allow for technology insertion